

HS4002/HS4902

Research Practicum II: Quantitative Social Research

Fall 2024

Seminar Time: W 1330-1520

Seminar Location: HSS Sem. Rm. 7

Lab Time: W 1530-1720

Lab Location: HSS Comp. Lab 5

Instructor: Ma Xiangyu

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Office: SHHK 05-40

Office Hours: By appointment.

Course Description

How do you design and produce a study that answers a social scientific question? That's what this course is about. In this class, you will learn how to articulate a research question, find the appropriate data, and use statistical techniques to come up with reasonable answers to your question. If you're wary of statistics and all things "quantitative" or "computational," do not worry – we as a class will help you succeed. It's a promise.

More formally, this course introduces you to quantitative modes of inquiry in social science research. We will dive right into practice. It will prepare you to engage in your own forays at research (such as the graduation project and beyond). It will help you become educated consumers of social science research. You will learn how to ask clear and tractable research questions, how to choose quantitative research designs that fits those questions, how to develop measures, analyze results, before finally drawing inferences that inform debates and help untangle puzzles in the social sciences.

Prerequisites: HS3002.

Intended Learning Outcomes

This course will train you to become an independent scholar who can design and complete a social scientific research project with real world data using a suite of quantitative research methods. By the end of the course, you should be able to:

1. Describe and assess various quantitative research designs.
2. Identify and justify which quantitative methods are appropriate for examining different types of research questions.
3. Develop a research proposal on a social scientific question of your choice.
4. Develop analytic approaches through conducting a brief research project on a social scientific question of your choice.
5. Demonstrate critical thinking and inquiry skills through course assignments and discussions.

Course Policies

Contacting me

The best way to reach me is through email. You can generally expect a response within 24 hours during the week, and by Monday morning if you email over the weekend.

Office hours

Office hours are scheduled hours where I will be in the office to answer any class-related questions you might have. It is also the primary way I get to talk to you one-on-one. You do not need to make an appointment beforehand – just stop by. I would encourage you to drop by at least *once* during the semester.

Typically, students talk about (a) class material they're wrestling with, (b) future plans or career goals, (c) ask about recommendation letters, (d) ask about graduate school/academia, or (e) just chat about college life in general. But you decide and I listen.

I am also happy to meet with you at other days or times if you can't make my scheduled office hours. In that case, please email me to set up a meeting, and include three possible times in your message.

Lateness policy

You are entitled to one 24-hour extension on any class assignment with no penalty. You may use this mulligan at any time at your own discretion. To do so, just send an email to me mentioning this, e.g. "ATTN: USING 24 HR EXTENSION ON ____").

Thereafter, late submissions will be penalized according to the following criteria: one letter grade (i.e. A > B) when submitted one day late, two letter grades (i.e. A > C) when submitted two to three days late. Assignments that are more than three days late will receive a o.

Negotiation around deadlines are only possible under exceptional circumstances.

A social contract around expectations

You are expected to come prepared for each class having read the required readings for the day. What does it mean to be "prepared"? To me, it means you come ready for an energetic discussion. You should have some questions on your mind, thoughts on what you learned (or didn't learn), what you're curious to learn more about, what you were surprised by and so on. The supplementary readings are *encouraged* but not mandatory.

You may bring and use your own computers in class. But please avoid using it in disruptive fashions. Among other things, it means *not* distracting yourself with group chats, Reddit, or personal entertainment. A healthy intellectual community requires that everyone be active listeners even when they're not speaking.

I'd like you to be daring but kind in the classroom. You should feel free to ask questions, and take shots in the darks at answers. At the same time, extend kindness and grace to the questions and

answers others pose.

If you foresee yourself missing an important class-date (such as those with in-class tests, or your presentation-turn), you must notify me ahead of time to discuss make-ups. Otherwise, as a general rule, I do not believe in strict attendance policies for college-aged students. If you must miss class, you do not need to provide me with an explanation. I will assume that you are serious about your commitment to this class. As such, I presume that if you miss class you have a good reason to do so (e.g., you are sick or otherwise contagious; you're caring for someone who is so). All that said, if you blow off class and do so on a regular basis, you will fall behind and find it very difficult to catch up – in that event, I'm unlikely to be sympathetic with your plight.

I take integrity in scholarship seriously. Claim the ideas that are yours, acknowledge your influences freely. This includes the use of large language model AIs (e.g. ChatGPT) in your work. If you ever find yourself in ambiguous situations with respect to plagiarism, academic fraud, or cheating, please come speak to me.

Computation

I teach the course in R. R is an open-source computing language that is widely used in statistics and the social sciences. R makes programming very easy, has strong graphical capabilities, and also contains canned functions for most commonly used estimators. If you are very familiar with another statistical software package you may use that for the course at your own risk. However, I can only support R.

Accommodations

If you believe that you need accommodations for a disability, please contact the NTU Inclusion & Accessible Education team for help. For more information, please visit their website [here](#). You are also welcome to contact me privately to discuss your academic needs.

Assessment Details

Assessment in this course is five-part. The first two parts have group-components to them. The rest of them are assessed at the individual level.

(1) Weekly Classroom Facilitation (15%): You will form teams (of not more than five) by the end of week 2. Each team will facilitate a 30-minute classroom session based on a select chapter of the Dillman et al. (2014) textbook. Teams will facilitate classroom discussions on weeks 5, 6, 8, 9, 10, 11 and 12. These weeks are appended with asterisks in the course outline. This classroom facilitation exercise is intended to be open-ended. You do not have plan to lecture for the entire 30 minutes. As an example, you could prepare a short 10 min presentation, and then break the class into small groups with prompts for a 10 minute discussion, and then have everyone reconvene for a 10 minute class-wide discussion.

(2) Team Research Proposal (35%): As part of the same team, you will produce and present a proposal for a research project using the methods we've engaged with across the semester. This is due on week 12 (11/6/24). The research proposal should be between 15 to 20 pages (double-spaced) in length, excluding

the references. You will be assessed on three things: (1) the research proposal itself, (2) a group presentation of the research proposal on week 13 (11/13/24), and (3) your peers' evaluation of your contribution to the project.

(3) Article Report (10%): You will submit one article report due before class in week 10 (10/23/24). This article report must be no longer than 4 pages (double-spaced) in length. In it, you will be critically analyzing an empirical research study that collects and analyses data using quantitative methods (it is a good idea to focus on the methods we cover in the class, but you are not strictly constrained to it). The article report should focus on the methodological approach of a study. I don't expect a standard form for this article report, but it should contain the following: (a) a precise summary of the paper (i.e. what are its motivations, theories, methods, data, and findings), (b) a detailed breakdown of its data, method and inferences, and (c) a critical review of the strengths and limitations of the study (what you appreciated about the study; what you wish it had done more of).

(4) In-class Tests (30%): There will be two in-class tests (on week 7 & week 13.). You will be assessed on your ability to identify appropriate statistics and methods for a given empirical problem, and your ability to make meaningful interpretations from the statistics produced. The first in-class test will cover material from weeks 2 through 6. The second in-class test will be cumulative, although with an emphasis on materials from weeks 8 through 11.

(5) Class Participation (10%): Lastly, I must assess your class participation. If you come prepared for each class and contribute to the discuss where you feel the urge to, you will excel. Ask questions; build on your classmates' perspectives; assert your own positions. If I feel that I haven't heard you speak enough in class, I will let you know at the appropriate points in the class.

Readings and References

There are five main books that we will be referring to across the course:

1. Dillman, D., Christian, L., & Smyth, J. 2014. *Internet, phone, mail, and mixed-mode surveys: the tailored design method (Fourth edition.)*. Hoboken, New Jersey: Wiley. (ebook available via NTU library)
2. Adler, E. S., & Clark, R. 2014. *An Invitation to Social Research: How It's Done*. Belmont: Cengage Learning.
3. Stockemer, D. 2019. *Quantitative methods for the social sciences: A practical introduction with examples in SPSS and STATA*. Springer.
4. Wickham, Hadley et al. 2023. *R for Data Science*. O'Reilly. (Available for free at <https://r4ds.hadley.nz>)
5. Fields, Andrew et al. 2012. *Discovering Statistics Using R*. Sage.

Course Outline

Below, I've sketched out an outline of the course. I may make small deviations from the outline at my discretion (I will update the class as I do). The general flow of each class-day proceeds as follows. The first half of each seminar focuses on the pragmatics of data collection in quantitative research. The second half of the seminar focuses on a particular analytic technique. In the lab that follows, we will do some hands-on practice with said technique.

Week 1 (8/14/24): Course Introduction

First week's a slow week. We discuss the structure and goals of the class. We will discuss what sociologists do. We will do an overview of what you can expect to learn from the class. We install R.

Supplementary readings:

- Chapter 1 from Adler & Clark (2014).
- Chapter 1 from Wickham et al. (2023): <https://r4ds.hadley.nz/intro>

Week 2 (8/21/24): Selecting Research Questions, and Getting Started in R

During the first section of the seminar, we will be going over how to select and frame research questions. During the second section of the R, I will walk you through the basics of scientific computing in R.

Required readings:

- Chapter 4 from Adler & Clark 2014

Supplementary readings:

- Chapters 3 from Wickham et al. (2023): <https://r4ds.hadley.nz/workflow-basics>
- Chapters 4 from Wickham et al. (2023): <https://r4ds.hadley.nz/data-transform>
- Chapters 6 from Wickham et al. (2023): <https://r4ds.hadley.nz/data-tidy>

Week 3 (8/28/24): An Introduction to Surveys and Univariate Analysis

During the first portion of the seminar, we will go over an introduction to modern survey research. During the second portion of the seminar, we will be going over the basics of univariate analysis.

Required readings:

- Chapter 1 and 2 from Dillman et al. (2014).

Supplementary readings:

- Chapter 1 from Field et al. (2012).
- Healy, Kieran. 2018. "Looking at data." *Data visualization: A Practical Introduction*. Available for free at : <https://socviz.co/lookatdata.html>

- Kim, Minjeong and Rachelle Brunn-Bevel. 2023. “No Face, No Race? Racial Politics of Voice Actor Casting in Popular Animated Films.” *Sociological Forum*.

Week 4 (9/4/24): Measures and Bivariate Analysis

What does it mean to measure something? What is an indicator? What is a concept? During the first portion of the seminar, we will discuss what goes into a measure. In the second part of the seminar, we will go into the basics of bivariate analysis.

Required readings:

- Chapter 4 from Dillman et al. (2014).
- Chapter 4 and 6 from Field et al. 2012.

Supplementary readings:

- Chapter 8, Stockemer 2019
- Lieberman, Stanley, and Eleanor O. Bell. 1992. “Children’s First Names: An Empirical Study of Social Taste.” *American Journal of Sociology*.

Week 5 (9/11/24): Population, Sampling, and Multivariate Analysis I*

This will be the first week that features a student-led portion. During the first portion of the seminar, there will be student-led discussion on population and sampling. I will also be introducing the basics of OLS regression: how to run it, how to interpret it, and how to compare models.

Required readings:

- Chapter 3 from Dillman et al. 2014
- Chapter 7 from Field et al. (2012).

Supplementary readings:

- UCLA Stats on OLS regression (available online for free): <https://stats.oarc.ucla.edu/stata/output/regression-analysis/>
- Peterson, Richard and Roger Kern. 1996. “Changing Highbrow Taste: From Snob to Omnivore.” *American Sociological Review*

Assignments:

- Weekly classroom facilitation #1

Week 6 (9/18/24) Asking Questions and Multivariate Analysis II*

The first portion of the class will feature the second student-facilitated discussion, this time on the art of crafting questions. During the second portion of the class, I will be introducing logistic regression.

Required readings:

- Chapter 4, 5, Dillman et al. 2014
- Chapter 8, Fields et al. 2014.

Supplementary readings:

- UCLA stats page on logistic regression: <https://stats.oarc.ucla.edu/r/dae/logit-regression/>
- Kim, Kwan Woo, and Phillipa K. Chong. 2023. “Writing by Women or for Women? Either Way, You’re Less Likely to Be Reviewed.” *Poetics*.

Assignments:

- Weekly classroom facilitation #2

Week 7 (9/25/24): The Aural and Visual Design of Surveys

There will be an in-class test covering materials from week 2 to week 6 during lab time.

Note: There is no class on 10/5/23 (recess week).

Required readings:

- Chapter 6, Dillman et al. 2014

Week 8 (10/9/24): Question Order and Multivariate Analysis III*

The first portion of the seminar will feature a student-led discussion on the impact of question order on surveys. During the second portion of the class, I will be introducing negative binomial regression.

Required readings:

- Chapter 7, Dillman et al. 2014

Supplementary readings:

- UCLA stats page on negative binomial regression: <https://stats.oarc.ucla.edu/r/dae/negative-binomial-regression/>
- Benediktsson, Mike Owen. 2010. “The Deviant Organization and the Bad Apple CEO: Ideology and Accountability in Media Coverage of Corporate Scandals.” *Social Forces*.

Assignments:

- Weekly classroom facilitation #3

Week 9 (10/16/24): Survey Implementation and Dimensionality Reduction I*

During the first portion of the seminar, there will be student-led discussion on the impact of question order on the implementation of surveys. During the lab, we will be learning about principal components analysis.

Required readings:

- Chapter 8, Dillman et al. 2014

Supplementary readings:

- [UCLA stats on PCA](https://stats.oarc.ucla.edu/spss/seminars/efa-spss/) (available online for free): <https://stats.oarc.ucla.edu/spss/seminars/efa-spss/>
- Daenekindt, Stign, and Henk Roose. 2013. “A Mise-en-scene of the Shattered Habitus: the effect of social mobility on aesthetic dispositions towards films.” *European Sociological Review*.
- Park, Minsu et al. 2019. “Global music streaming data reveal diurnal and seasonal patterns of affective preference.” *Nature*.

Assignments:

- Weekly classroom facilitation #4

Week 10 (10/23/24): Web Surveys and Dimensionality Reduction II*

The first portion of the seminar features a student-facilitated discussion on the implementation of surveys on web platforms. During the lab, we will be learning about multiple correspondence analysis.

Required readings:

- Chapter 9, Dillman et al. 2014

Supplementary readings:

- Childress, Clayton et al. 2016. “Publishers, authors, and texts: the process of cultural consecration in prize evaluation.” *Poetics*.

Assignments:

- Article report
- Weekly classroom facilitation #5

Week 11 (10/30/24): Mail Surveys and Panel Data*

We begin by covering about how mail surveys are implemented. In the second portion of the seminar, we will be learning about how we can use panel data, where we follow a fixed unit over time.

Required readings:

- Chapter 10, Dillman et al. 2014

Supplementary readings:

- Princeton University library’s guide to fixed effects models: <https://www.princeton.edu/otorres/Panel101.pdf>
- Haviv, Avery, Yufeng Huang, and Nan Li. 2020. “Intertemporal Demand Spillover Effects on Video Game Platforms.” *Management Science*.

Assignments:

- Weekly classroom facilitation #6

Week 12 (11/6/24): Mixed-mode Surveys and Review*

During the first portion of the class, we will be discussing the fielding of mixed-mode surveys. The second portion of the class will be dedicated to a review of the different methods we've learned.

Required readings:

- Chapter 11, Dillman et al. 2014

Assignments:

- Weekly classroom facilitation #7
- Team research proposal

Week 13 (11/13/24): Group Presentations and In-class Test #2

The first portion of the class will be dedicated to group presentations of the Team Research Proposals. We will be having our second in-class test during lab.

Assignments:

- Group presentations of team research proposals.
- In-class test 2